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54 Easily stackable polygonal canister with integrated dosing device.

97 Polygonal canister (1) with an integrated dosing device (13) designed in such a way that, when a build-up of such canisters is made, protection of the individual dosing devices is ensured, great stability of the build-up is achieved and cube efficiency for storing or transportation is maximized.

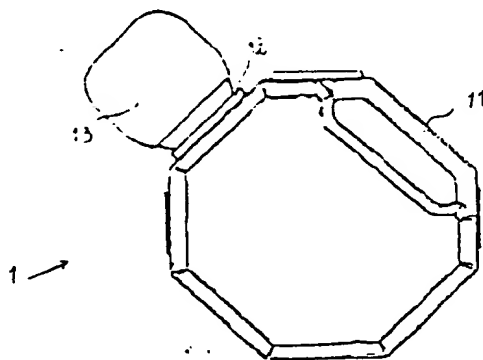


fig.1

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**EP 0 358 257 A1**

## EASILY STACKABLE POLYGONAL CANISTER WITH INTEGRATED DOSING DEVICE

### Technical Field

The invention relates to a polygonal canister with an integrated dosing device which has been designed in such a way that stacking and palletizing can be achieved with a much greater stability, that protection of the dosing device is ensured, and that the cube efficiency for storing or transporting such polygonal canisters with integrated dosing device is maximized.

### Background of the Invention

Polygonal canisters and more specifically octagonal canisters are known on the market. In general they are equipped with a spout and with a carrying handle. Their major advantage is that the spout position is flexible, i.e. it will be upright ( $0^\circ$ ) for blowing, filling and refilling; slanted ( $45^\circ$ ,  $90^\circ$ ,  $135^\circ$ ) for easy pouring; downward ( $180^\circ$ ) for emptying and, in most instances, at  $45^\circ$  for carrying. The existing octagonal canisters have, on the other hand, the disadvantage that they tend to topple over when even light lateral forces are applied. This is due to the low ratio of the canister's base width vs. the canister's total width. This disadvantage is even stronger when octagonal canisters are aligned or stacked on pallets for transportation.

Present day washing techniques tend more and more to use liquid detergents. Canisters are an obvious way of packing liquid detergents in larger quantities and are consequently more advantageous. Furthermore, it is highly desirable to use a dosing device when washing with a liquid detergent in a washing machine and as a consequence it is advantageous to have the dosing device delivered in good condition together with the liquid detergent, and to have it always readily available at the location of actual use.

It is an object of the present invention to provide a polygonal canister with an integrated dosing device which is easy to make, easy to fill, easy to handle and which is at the same time stable during transportation and while stacked and which, furthermore, is stackable in such a way that both stability of the container and protection of the dosing device are ensured.

German Patent Application 31 07 716 A1 describes an octagonal canister with a flexible handle, which handle shows a protrusion when folded down, said protrusion coinciding with a recess in the bottom of an identical canister when it is posi-

tioned on top of the folded down handle. Another recess in another side panel of the described octagonal canister coincides with the side of the stopper of an identical canister positioned underneath said recess. The octagonal canister according to DE 31 07 716 is however expensive to make and is prone to topple over when some pressure is exerted on the side of the canister.

An example of a dosing device integrated with a liquid container has been disclosed in European Patent Application 86400714.1, published November 12, 1986. However, the disclosed containers are of the bottle-type and the dosing device is simply clipped on the top of the bottle, thereby requiring more shelf space and sitting in a position vulnerable to crushing or other damaging if no additional protection is foreseen during transportation or stacking.

A rectangular canister with an integrated dosing device is found on the market and is represented in design registration Nr. MR26 344. As will be evident to the man of the art, such canisters are difficult and expensive to make and may lack stability both in transportation and in storage.

### Summary of the Invention

The canister according to the invention is of the polygonal type, and is equipped with a dosing device which is to be protected during palletizing, transportation and shelving. In addition, the dosing device acts as a structural building element in that it increases the stability of a build-up of canisters during said palletizing, transportation and shelving, when said canisters are oriented in the  $45^\circ$  position, when considering that  $0^\circ$  position is that of the canister sitting with its spout vertically upwards, the degrees being counted counter-clockwise. In order to improve even more such canisters' stacking stability, interlocking elements are provided on coinciding panels of the canisters when stacked in the  $45^\circ$  position for palletizing, transportation or shelving. To improve alignment when building up individual canisters into an assembly in the  $45^\circ$  position, and to avoid rubbing damage, anti-slip features are foreseen on coinciding side panels. Thanks to the structural building effect of the dosing device, the coinciding interlocking elements and the coinciding anti-slip features, no additional protection is needed between the individual canisters or individual layers of canisters during palletizing and transportation. After filling of the empty canisters in position  $0^\circ$  the canister's spout is

closed by a conventional means and the dosing device is positioned over the spout. Subsequently the complete canisters are palletized in the 45° position, a protective topsheet is possibly added, and the complete pallet load is shrinkwrapped.

After transportation, the pallet is either displayed as such at the salespoint after removal of the shrinkwrap and the possible protective topsheet, or a display of the individual containers is built in the same way as these containers were palletized.

The labelling or marking of the front panels of the empty canisters preferably is applied in such a way that it is horizontally readable when the canister is in the 45° position.

### Brief Description of the Drawings

Figure 1 is a front view of the most preferred embodiment of the polygonal canister with dosing device according to the invention, represented in the stacking position (45°).

Figure 2 is a front view of the canister represented in Figure 1 but without cap or dosing device and represented in the filling position (0°).

Figure 3 is a top view of the canister represented in Figure 2.

Figure 4 is a side view of the canister of Figure 2, seen from the right.

Figure 5 is a bottom view of the canister of Figure 2.

Figure 6 is a side view of the canister of Figure 2 seen from the left.

Figure 7 is a build-up of 9 canisters of Figure 1.

The canister with integrated dosing device as represented in the preferred embodiment is normally blow-molded. The dosing device can be of any suitable shape or configuration and made of any material suitable for dosing devices to be used in a washing machine. Although the canister has been represented either with an open spout or with an integrated dosing device, the spout can be closed by a conventional means like e.g. a screw-on cap or a snap-on cap before the dosing device is fitted on it or the dosing device itself can act as closure for the canister spout, after the latter has been closed with e.g. a peel-off foil.

### Detailed Description of the Drawings

While the specification concludes with the claims which particularly point out and distinctly claim the subject matter forming the present inven-

tion, it is believed that this invention will be better understood from the following description of the preferred embodiment taken in conjunction with the accompanying drawings listed hereabove.

The front view of Figure 1 shows an octagonal canister (1) in the 45° position, when considering that 0° position is that of the canister sitting with its spout vertically upwards, the degrees being counted counter-clockwise. The dosing device (13) is mounted on spout (12) and the carrying handle (11) is in the 270° position. This is the position which is the most practical for shelving or casing the canister with integrated dosing device and which is also the handiest for pouring from a filled container.

The octagonal canister (1) represented in Figure 2 is shown in its blowing, filling and refilling position, i.e. at 0° with the spout on the top side panel. It consists of 2 front panels (2a and 2b), side panels (3a,b,c, 4a,b,c, 5, 6a,b,c, 7a,b,c, 8a,b,c, 9a,b,c, 10a,b,c), handle (11) and spout (12). Handle (11) embodies in fact side panel (5) and part of the two adjacent side panels (4) and (6).

Figure 3 shows the top view of the canister when in 0° position, when side panels (10a,b,c, 3a,b,c and 4a,b,c) can be seen. Side-panel (3) is provided with spout (12), shown here with a screw thread (14). Side panel (4b) is provided with protrusion (15) and its end adjacent to panel (5), which is not seen, forms part of handle (11). Side-panel (10b) is provided with two ribbed anti-slip strips (16).

The side view shown in Figure 4 comprises side panels (4a,b,c, 5 and 6a,b,c). Side panel (3) cannot be seen but spout (12) stands up over it. Side panel (4b) is shown with protrusion (15). Handle (11) equals entire side panel (5) along canister side wall portion (17) and comprises part of side panels (4) and (6) adjacent to side panel (5). Side panel (6b) shows two ribbed anti-slip strips (16).

Figure 5 shows side panels (6a,b,c, 7a,b,c and 8a,b,c). Side panel (6b) which is partially formed by handle (11) shows ribbed anti-slip strips (16) whereas side panel (8b) shows recess (18) which is to coincide in shape with protrusion (15) found on side panel (4b) of Figure 4.

Figure 6 shows side panels (8a,b,c, 9a,b,c and 10a,b,c) with pour spout (12) standing up over unseen side panel (3). Side panel (8b) is provided with a recess (18) which is to coincide in shape with protrusion (15) on side panel (4b) of Figure 4. Side panel (10b) shows two ribbed anti-slip strips (16).

The build-up (19) of canisters (1) with dosing device represented in Figure 7 shows how the canisters interlock through cooperation of recesses (18) and protrusions (15) and of ribbed anti-slip strips (16) and create a void (20) between them.

The orientation of the canisters to the 45° position when assembled in a build-up, ensures that the dosing devices (13) are nested in this void (20) and are consequently protected against crushing or damaging. At the same time, these dosing devices (13) give additional stability to the canister build-up (19) by acting as a structural building element, thereby preventing the octogonal canisters from toppling over.

If maximum protection and structural building contribution of the dosing devices is desired, it will be important to position the spout and the coinciding dosing device in such a way that the void (20) between the built up canisters is almost filled with said dosing device which is in the immediate vicinity or even in contact with the other three canisters. In the case of a generally spherical dosing device this may mean centering of the spout on side panel (3b). The system described in this patent application works however also very well with polygonal canisters provided with an integrated dosing device which is of such a shape that it does only partially fill the space between the build-up of polygonal canisters. It is enough that the dosing devices are in contact with or in the immediate vicinity of one or more of the other canisters in the build-up to ensure that an additional stabilizing effect is obtained and that the individual dosing devices are protected during transportation. Even if the individual dosing devices located in void (20) are not in contact with the other canisters surrounding the void, they will still be protected against crushing or damaging.

## Claims

1. Polygonal canister (1) with spout (12) and integrated handle (11) characterized in that said canister is provided with an integrated dosing device (13).

2. Polygonal canister according to claim 1, characterized in that the handle (11) is in the 270° position, when considering that 0° position is when the canister is sitting with its spout vertically upwards, the degrees being counted counter-clockwise.

3. Polygonal canister according to claim 1 or 2, characterized in that opposite side panels (4, 8) are provided with interlocking elements (15, 18) which cooperate when said canisters are put one on top of the other in the 45° position.

4. Polygonal canister according to any of the preceding claims, characterized in that opposite side panels (6, 10) are equipped with anti-slip features (16) which coincide when several canisters are in horizontal alignment in the 45° position.

5. Polygonal canister according to any of the

preceding claims, characterized in that the labeling or marking of the front panels is horizontally readable when the canister is in 45° position.

6. Build-up (19) of canisters according to any of the preceding claims, characterized in that several rows of canisters laterally aligned in 45° position, are superposed, the integrated dosing device (13) being located in the void (20) created between the respective side panels (3, 5, 7, 9) of the respective canisters of the build-up.

7. Build-up (19) of canisters according to claim 6, characterized in that the dosing device (13) integrated via side panel (3) of one canister, is in the immediate vicinity of the respective side panels (5, 7, 9) of the three other canisters defining the void (20) into which it projects.

8. Build-up (19) of canisters according to claim 6, characterized in that the dosing device (13) integrated via side panel (3) of one canister, is in the immediate vicinity of one or more of the respective side panels (5, 7, 9) of the three other canisters defining the void (20) into which it projects.

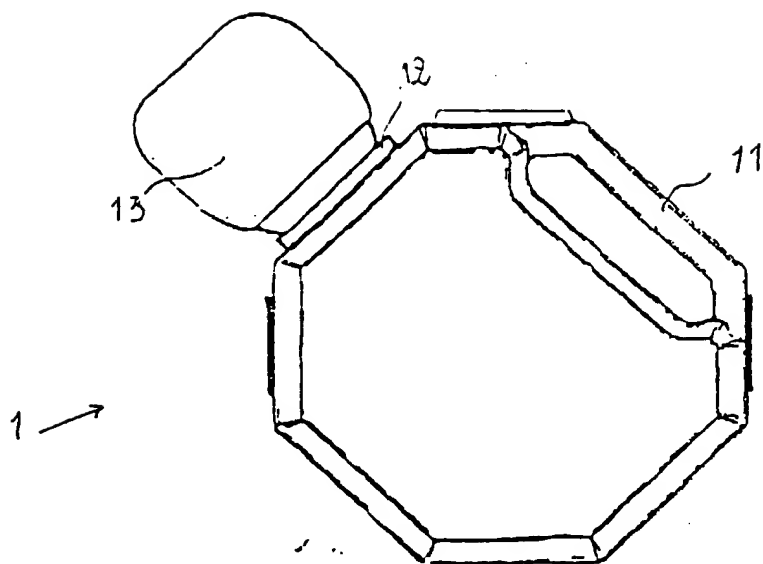


fig. 1

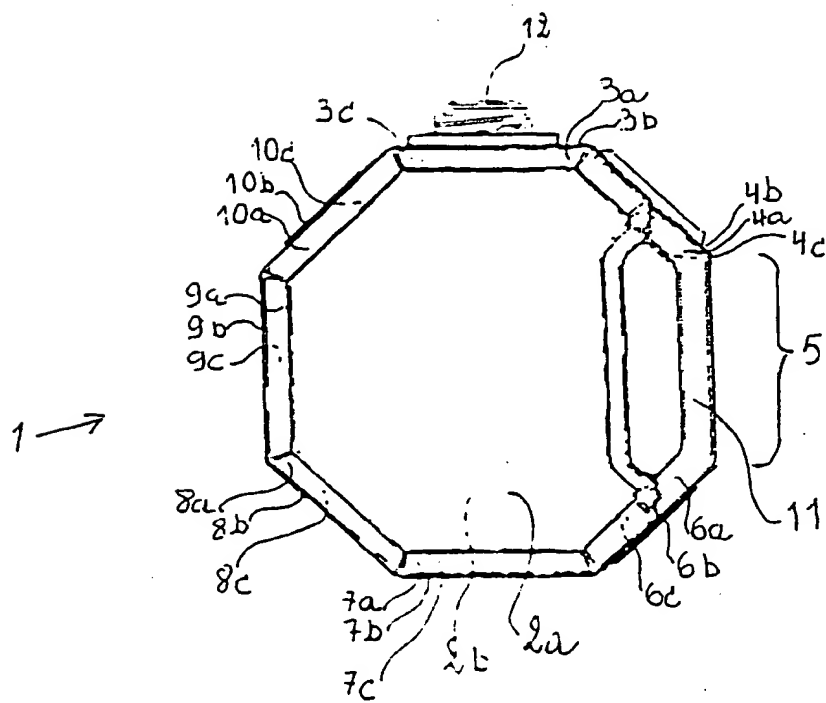


fig. 2

fig.3

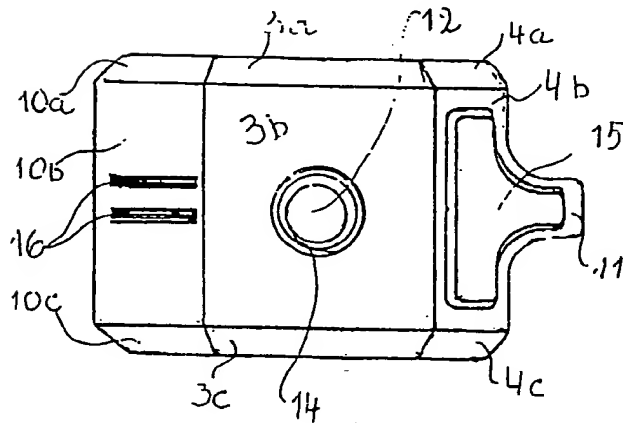


fig.4

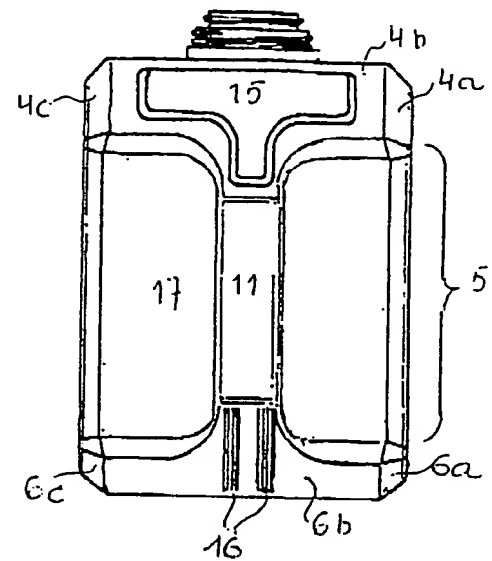


fig.6

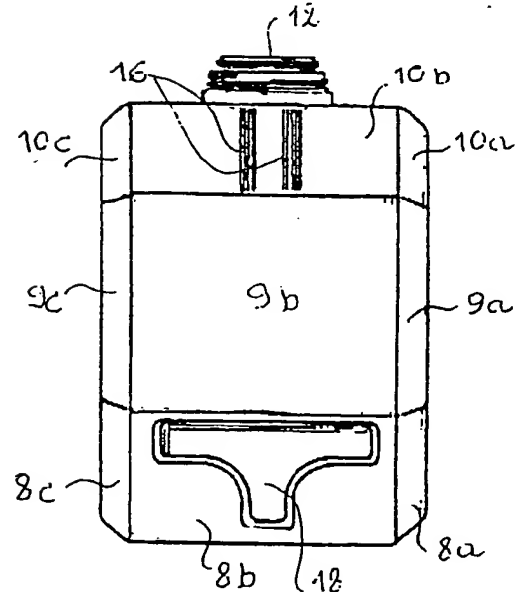


fig.5

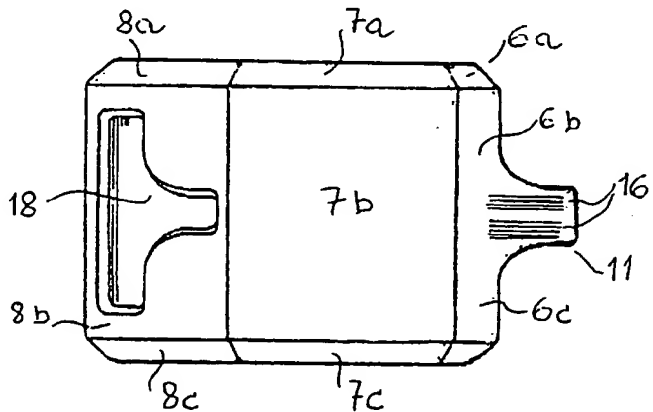
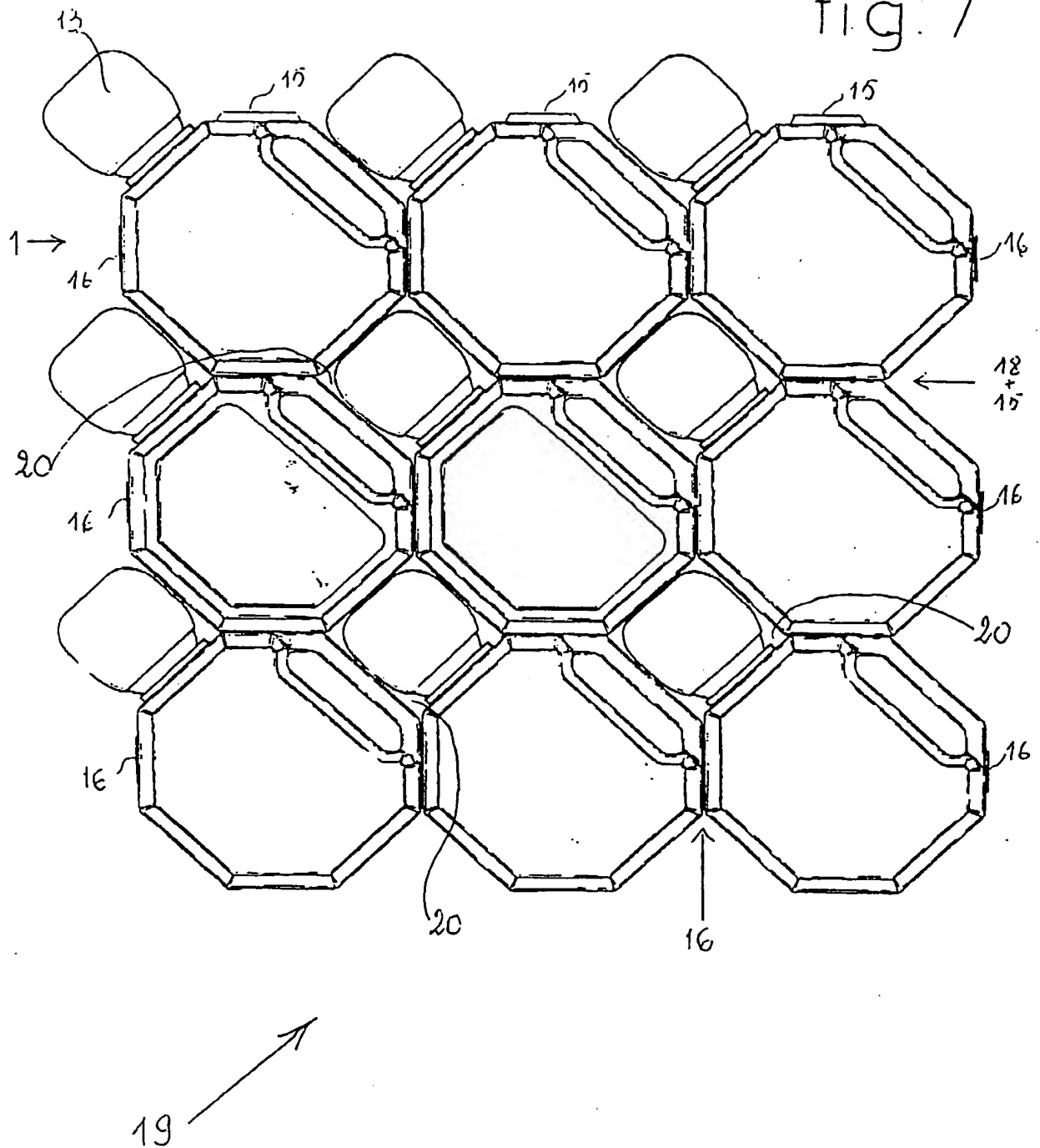


fig. 7





EP 89 20 2141

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
D,A	EP-A-0 201 376 (PROCTER & GAMBLE) * Page 5, line 25 - page 6, line 3; figures 1,2 * ----	1	B 65 D 21/02 B 65 D 1/14
A	FR-A-1 483 961 (CARNAUD) * Whole document * ----	1,2,5-8	
A	FR-A-1 552 929 (VOGT) * Whole document * ----	1-3	
A	DE-A-1 486 402 (HASSELMANN) * Page 3, line 12 - page 4, line 2; figures 1,2 * ----	1,3,4	
D,A	DE-A-3 107 716 (HAGEN) ----		
A	US-A-3 583 590 (FERRARO) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 5)
			B 65 D D 06 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22-11-1989	Examiner MARTENS L.G.R.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

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